



NOAA RESEARCH • ESRL • PHYSICAL SCIENCES DIVISION

Theme 1: Observing the Physical System

Arctic- Summary

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Science Review
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PSD Arctic Research is Aligned with NOAA Priorities

- Sustain climate records
- Improve understanding of interactions and processes of key oceanic, terrestrial, and atmospheric components of Earth's climate system
- Maximize the amount of information from NOAA observing systems, partnerships, and leveraged non-NOAA observing capabilities

What you heard

PSD is advancing understanding of the complex Arctic system with comprehensive observations and analyses

1-1 Matthew Shupe

1-2 Ola Persson



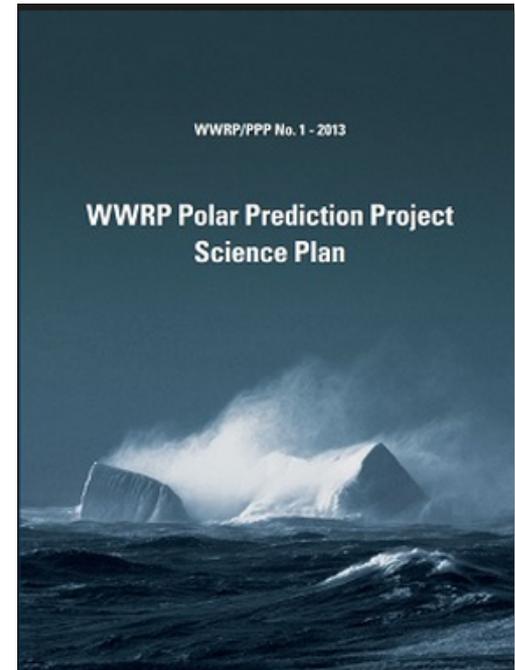
1-3 Gijs de Boer

PSD Arctic Research Notable Successes

- PSD is a leader in Arctic observing science, and active participants in national and international planning
- PSD observations and research have characterized the formation and maintenance mechanisms of Arctic mixed phase clouds
- PSD has quantified the influence of Arctic clouds and the boundary layer on the surface radiation heat budget
- PSD makes Arctic observations and research products easily accessible to facilitate collaboration science
- PSD continues to innovate Arctic observing technology and push observational excellence

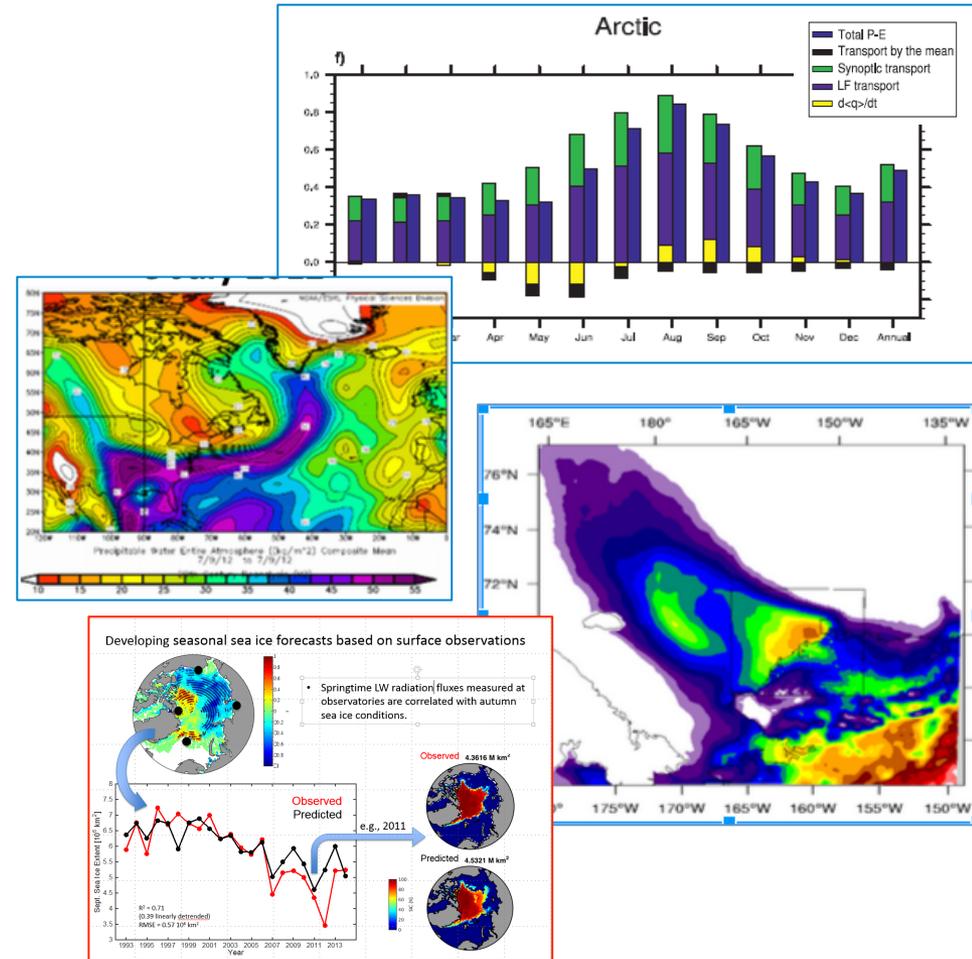
What's Next for Arctic Observations?

- Continued commitment to obtaining pan-Arctic atmospheric measurement records and developing innovative observing technologies
- Continued leadership to obtain a full annual cycle of coupled Arctic system observations – **MOSAIC**
- Participation in **Year of Polar Prediction**
- Continuing to work with our partners in NOAA, across agencies and universities, and internationally



What's Next for Arctic System Research?

- How can observations help us to understand the two-way linkages between the Arctic and global weather and climate?
- How can sea ice models and forecasting be improved through observations that allow for a more comprehensive understanding of coupled Arctic processes?



Panel Discussion

- Taneil Uttal
- Matthew Shupe
Unraveling the Secrets of Arctic Clouds
- Ola Persson
Understanding Atmospheric Forcing of Arctic Sea Ice Through Surface Energy Fluxes
- Gijs de Boer
Arctic Observing: Addressing Current Limitations to Advance Scientific understanding